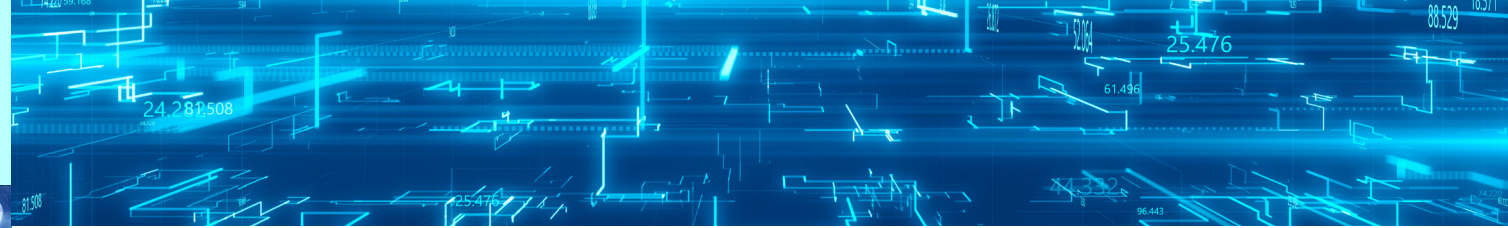




4SiM

Scalable Socio-Technical
System Simulation
in Manufacturing



WHAT IS 4SiM

4SiM (Scalable Socio-Technical System Simulation in Manufacturing) is a European collaborative initiative, co-funded by Erasmus+, aiming to create innovative simulation environments for socio-technical systems in manufacturing.

Grounded in Lean Production, safety, human factors, and integrated management systems, 4SiM creates innovative learning platforms and targeted training programs.

It connects technology with people, empowering educators and future professionals with the skills to meet the challenges of Industry 4.0 and 5.0, driving innovation, resilience, and sustainable growth in manufacturing.

4SiM is not just a learning platform. It is the bridge between education and industry, preparing the European workforce to lead in innovation, efficiency, and sustainability



WHY DO WE NEED 4SiM

The manufacturing sector is a cornerstone of the European economy, but sustainable growth requires a skilled workforce capable of managing complex socio-technical systems. Rapid transformation driven by digitalization, automation, and Industry 4.0- 5.0 makes this need even more urgent.

4SiM connects theory and practice through hands-on, AI-enhanced training, preparing students and professionals with the skills required for Industry 4.0–5.0.

Key Benefits

- ◆ **Practical learning** Simulations and exercises that reflect real manufacturing challenges.
- ◆ **AI-supported training** Personalized learning paths adapting to learners and industry developments.
- ◆ **Industry 4.0–5.0 readiness** Human-centric, sustainable, and automated manufacturing skills.
- ◆ **Skill development** Multidisciplinary abilities, teamwork, integration of quality, safety, and efficiency.
- ◆ **Scalable and flexible learning** Effective for large groups and distance learning.

WHAT ARE THE OBJECTIVES OF 4SiM

The main goal of 4SiM is to create a novel simulation environment of socio-technical systems (STS) in manufacturing and a related learning platform. This is achieved through four key objectives:

- 1** Create the requirements for a manufacturing STS simulation designed to emulate realistic learning scenarios for Lean Production, safety, integrated management systems and human factors.
- 2** Develop the Simulation Model & Learning Platform
 - Accessible, inclusive, and adaptable design.
 - Supports priorities: innovative learning practices, digital & green skills and inclusion in higher education.
- 3** Create the Final Validated 4SiM Platform
 - Large-scale pilot testing with diverse learners, group sizes and teaching approaches.
- 4** Actively Disseminate Results
 - Open access platform, guidelines, scientific research, online webinars and targeted workshops for educators.

WHO CAN BENEFIT FROM 4SiM

4SiM was designed to bring value to a wide community:

- Educators & Trainers of the current and future European workforce
- Students & Learners & Safety Engineers trainees
- The European Manufacturing Sector
- Professional stakeholders, such as OSH clusters and industrial networks, government agencies and policy stakeholders.

WHAT ARE WE GOING TO DEVELOP?

A fully functional socio-technical simulation system driven by AI, with realistic manufacturing environments, AI powered characters, multilingual capabilities and adaptive learning mechanisms. The resulting 4SiM platform is a complete learning simulation of manufacturing environments, production systems and decision-making issues.

4SiM site: <https://project-4sim.com/>



PROJECT PARTNERS

